Title:SYSTEMS, METHODS, AND COMPUTER PROGRAM PRODUCTS FOR STORING AND
RETRIEVING PRODUCT AVAILABILITY INFORMATION FROM A STORAGE CACHE
INVENTORY SYSTEM
Inventor(s): Hartmann et al. al.
Application No: To be assigned
Atty Dkt No: 043474/267956
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<u>Figure 1</u>

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Figure 2A

Figure 2B

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INVENTORY SYSTEM
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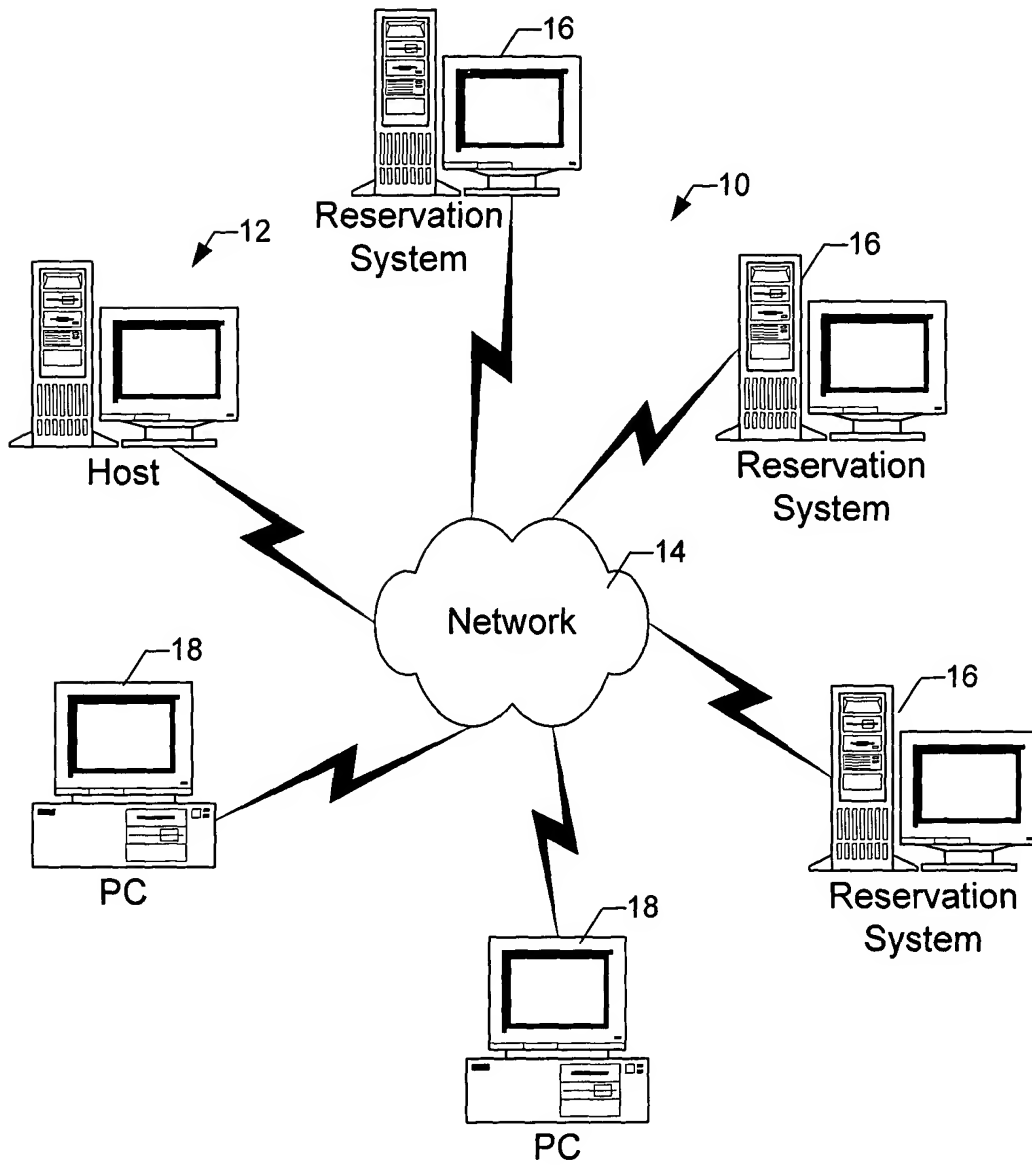Atty Dkt No: 043474/267956
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Accumulator ⟋34

Results to Customer

⟋30

Customer Availability Request

Availability Requestor ⟋32

Availability Cache

⟋36

Cache Management System

Figure 3

Title:SYSTEMS, METHODS, AND COMPUTER PROGRAM PRODUCTS FOR STORING AND
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Figure 4

Title:SYSTEMS, METHODS, AND COMPUTER PROGRAM PRODUCTS FOR STORING AND
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INVENTORY SYSTEM
Inventor(s): Hartmann et al. al.
Application No: To be assigned
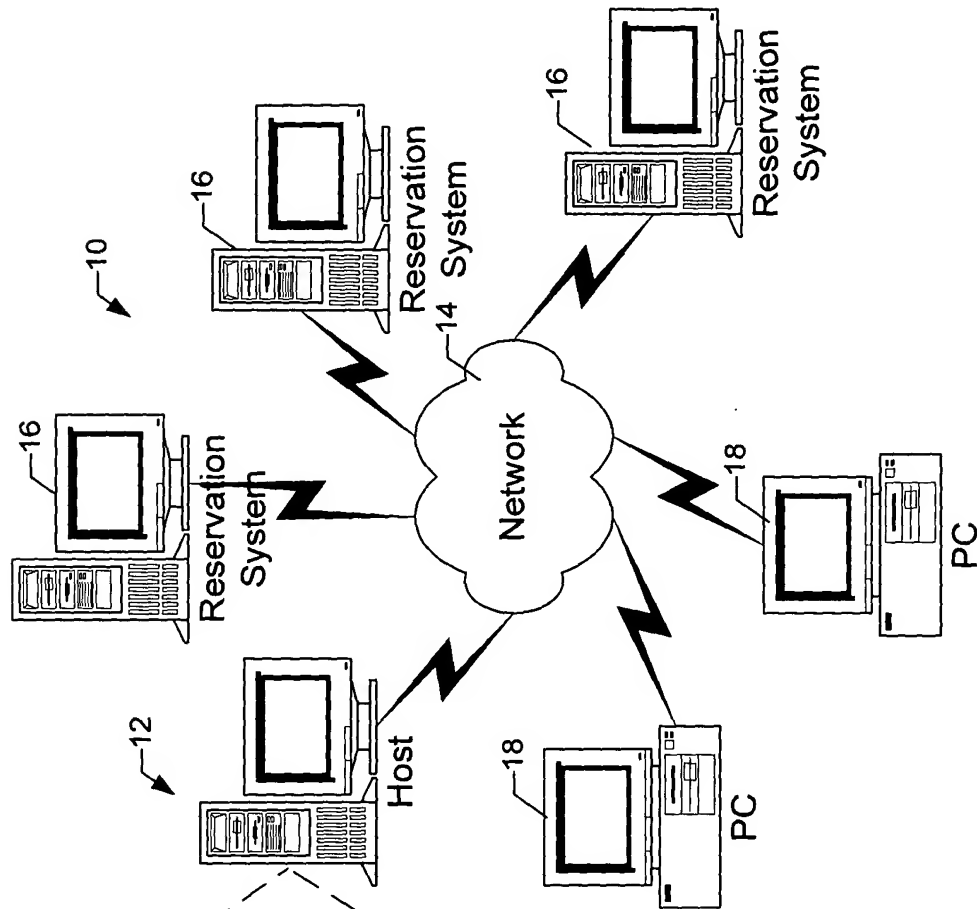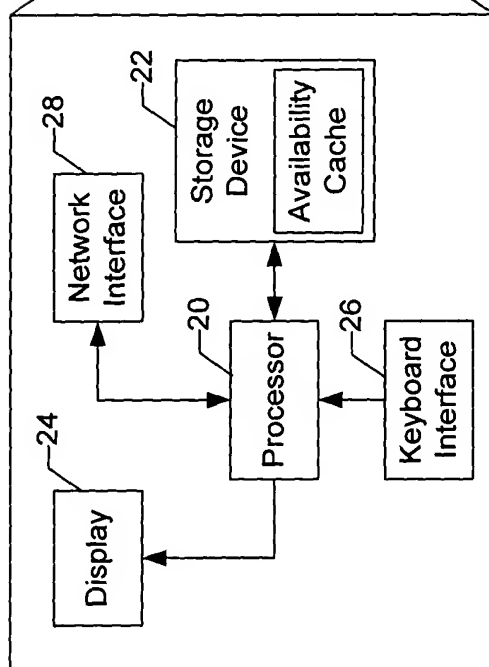Atty Dkt No: 043474/267956
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```
                         ┌─────────┐
                         │  Start  │
                         └────┬────┘
                              │
                              ▼
         ┌──────────────────────────────────┐
         │ Determine the Total Number of     │
         │ Queries per Property that will be │──── 100
         │ Executed During a Given Cache     │
         │ Update Session                    │
         └────────────────┬─────────────────┘
                          │
                          ▼
                      ╱──────────╲  ── 110
                    ╱  Desired No. ╲
                  ╱   Greater than   ╲         No
                 ╱  Maximum No. of    ╲ ──────────────┐
                  ╲    Allowed        ╱               │
                    ╲   Queries?    ╱                 │
                      ╲──────────╱                    │
                          │ Yes  ── 130               │
                          ▼                           ▼
         ┌────────────────────────────┐    ┌────────────────────┐
         │ Determine the Number of     │   │ Assemble Query List │── 120
         │ Queries to be Allotted      │   │ for All Check-in     │
         │ to Each Hotel               │   │ Dates of All         │
         └──────────────┬─────────────┘    │ Desired Queries      │
                        │                   └──────────┬──────────┘
                        ▼                              │
         ┌────────────────────────────┐ ── 140        │
         │ Determine Maximum Number of │               │
         │ Days that Can Be Queried     │              │
         └──────────────┬─────────────┘                │
                        │                              │
                        ▼                              │
         ┌────────────────────────────┐                │
         │ Use the Fall-Off Function to │ ── 150        │
         │ Create a List of Numbers     │               │
         │ that Fall-Off in an          │               │
         │ Exponential Manner           │               │
         └──────────────┬─────────────┘                │
                        │                              │
                        ▼                              │
         ┌────────────────────────────┐ ── 160         │
         │ Generate a Query List Based  │               │
         └──────────────┬─────────────┘                │
                        │                              │
                        ▼                              │
         ┌────────────────────────────┐ ── 170         │
         │ Store Query List             │◄─────────────┘
         └──────────────┬─────────────┘
                        │
                        ▼
                   ┌─────────┐
                   │   End   │
                   └─────────┘
```

Figure 5

Title:SYSTEMS, METHODS, AND COMPUTER PROGRAM PRODUCTS FOR STORING AND
RETRIEVING PRODUCT AVAILABILITY INFORMATION FROM A STORAGE CACHE
INVENTORY SYSTEM
Inventor(s): Hartmann et al. al.
Application No: To be assigned
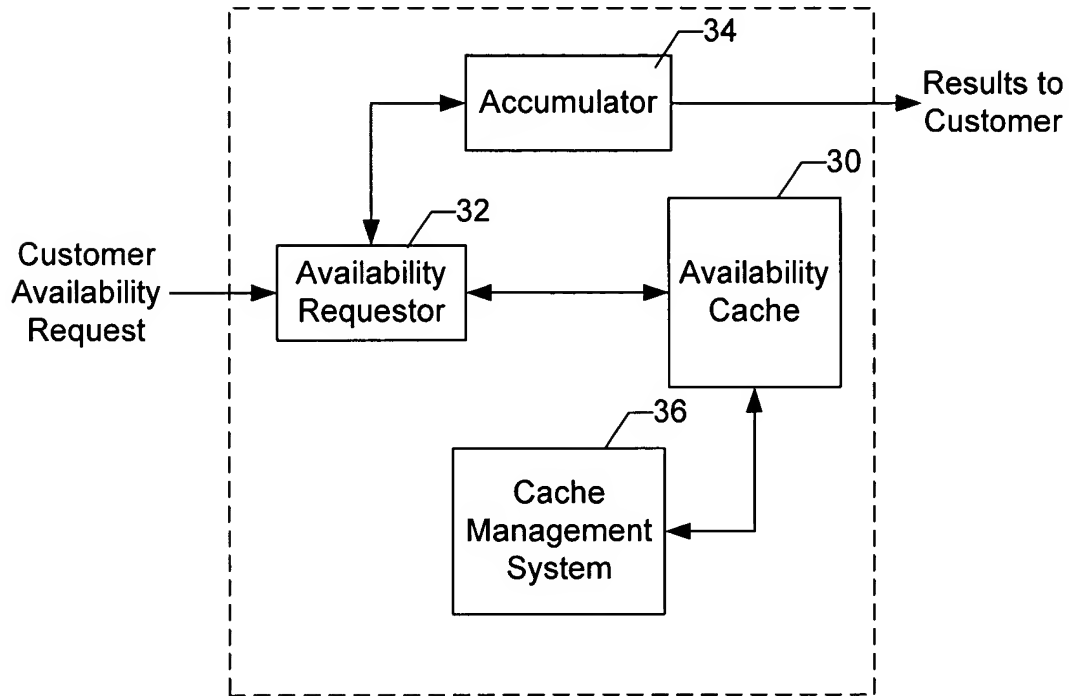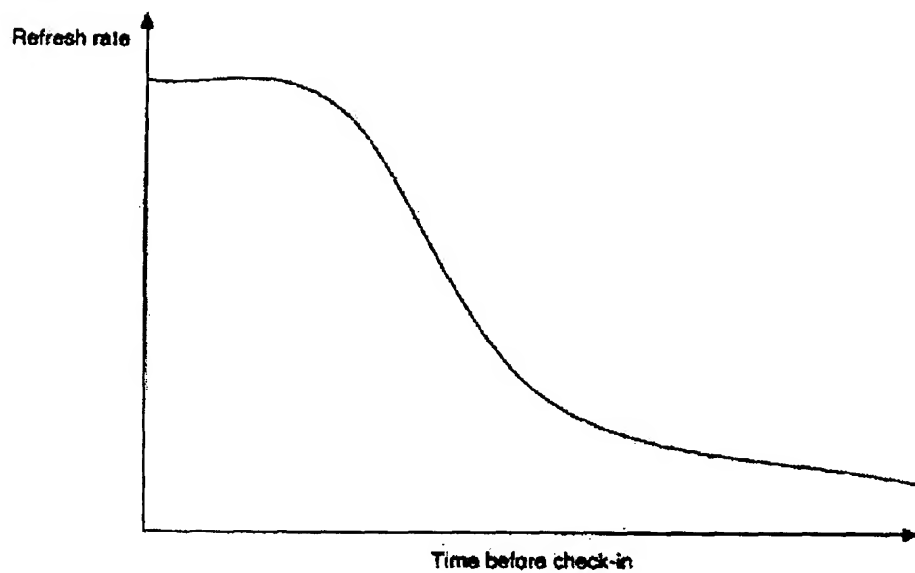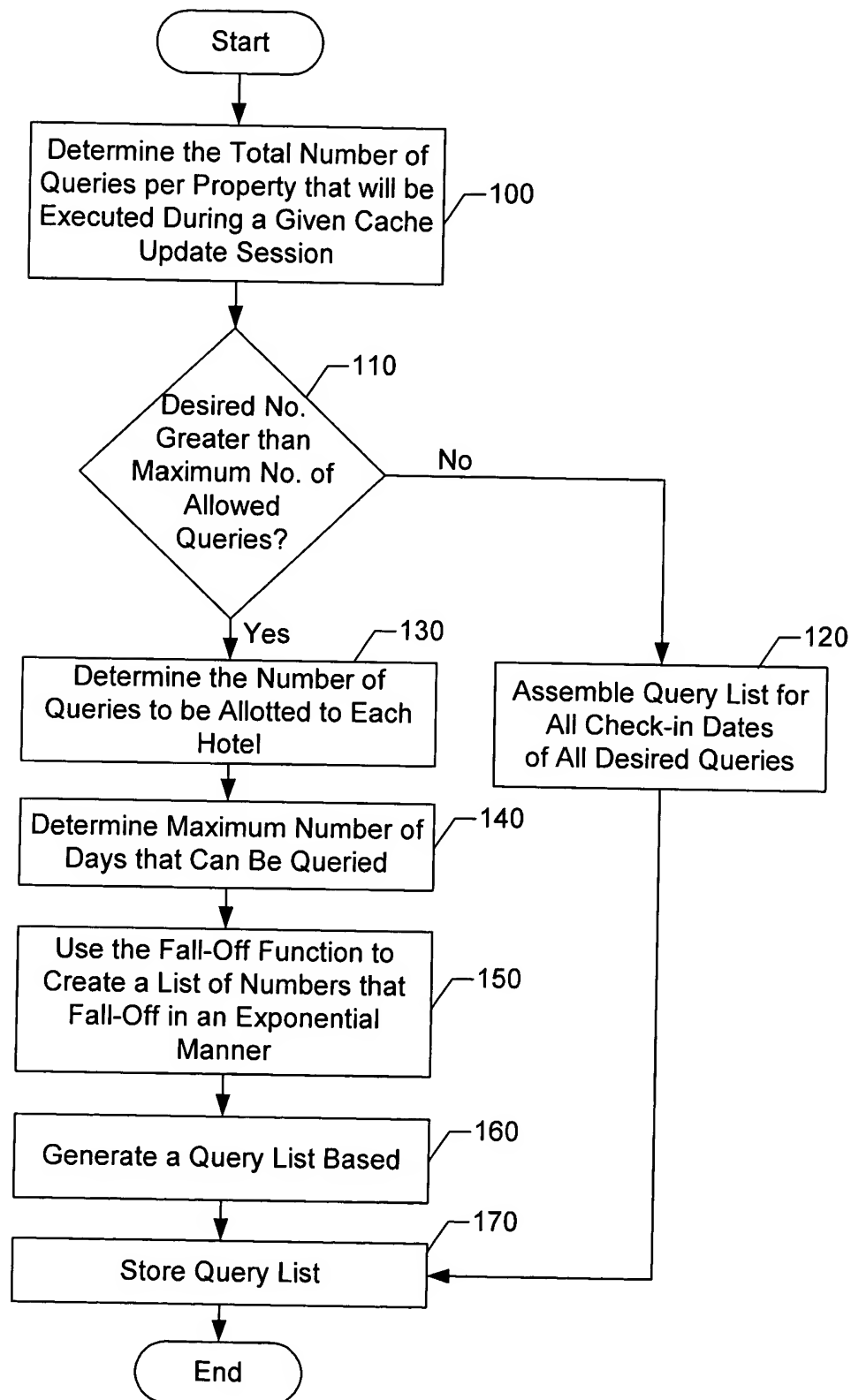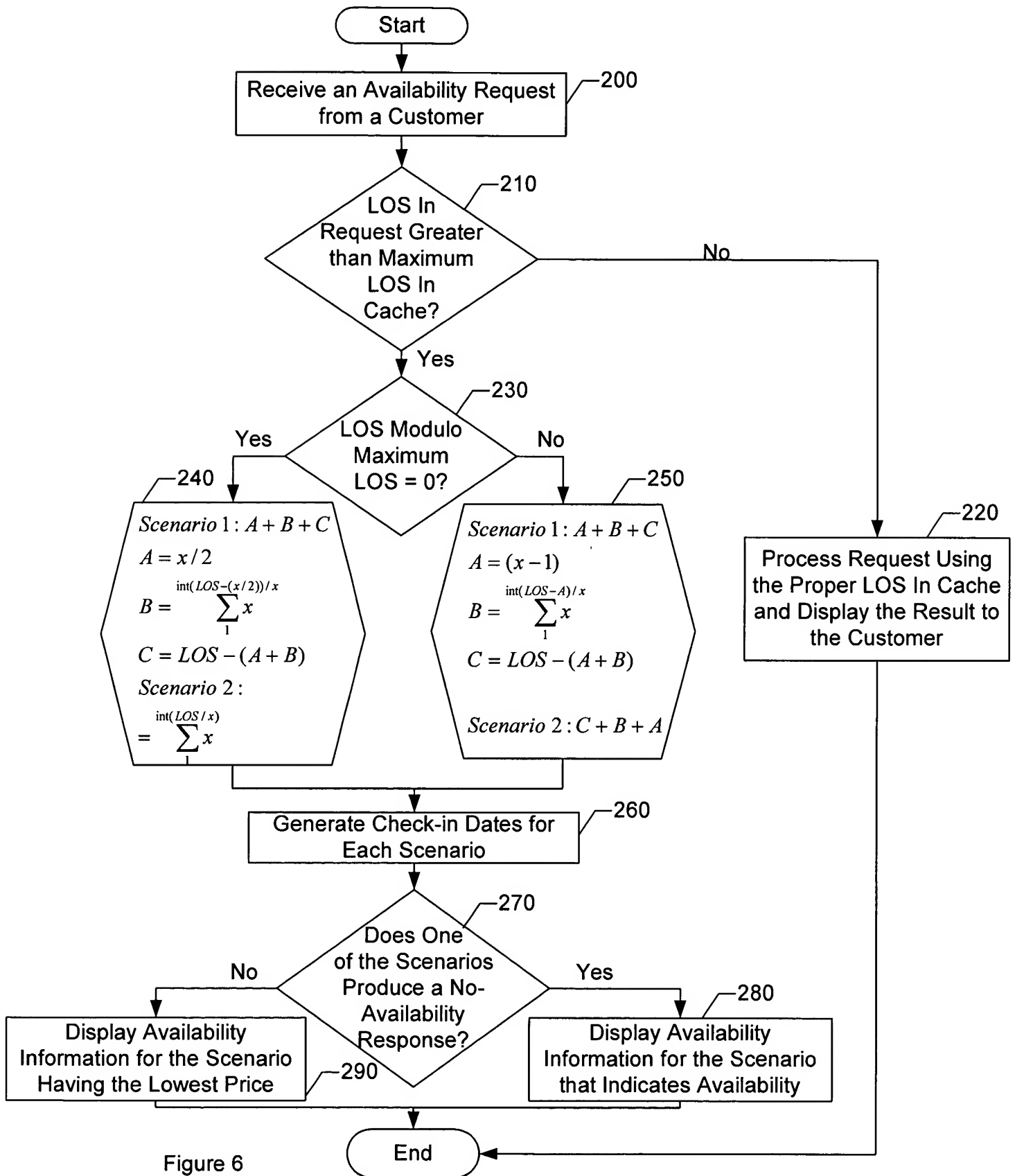Atty Dkt No: 043474/267956
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Start

Receive an Availability Request from a Customer —200

LOS In Request Greater than Maximum LOS In Cache? —210

No

Yes

LOS Modulo Maximum LOS = 0? —230

Yes

No

—240

Scenario 1 : $A + B + C$

$A = x / 2$

$B = \sum_{1}^{\text{int}(LOS-(x/2))/x} x$

$C = LOS - (A + B)$

Scenario 2 :

$= \sum^{\text{int}(LOS/x)} x$

—250

Scenario 1 : $A + B + C$

$A = (x - 1)$

$B = \sum_{1}^{\text{int}(LOS-A)/x} x$

$C = LOS - (A + B)$

Scenario 2 : $C + B + A$

—220

Process Request Using the Proper LOS In Cache and Display the Result to the Customer

Generate Check-in Dates for Each Scenario —260

Does One of the Scenarios Produce a No-Availability Response? —270

No

Yes

Display Availability Information for the Scenario Having the Lowest Price —290

Display Availability Information for the Scenario that Indicates Availability —280

End

Figure 6